

S/N 10/690,798

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Jay Edelberg et al.	Examiner:	Patricia C. Mallari
Serial No.:	10/690,798	Group Art Unit:	3735
Filed:	October 21, 2003	Docket:	1676.001US2
Title:	ENHANCED BIOLOGICALLY BASED CHRONOTROPIC BIOSENSING		

INFORMATION DISCLOSURE STATEMENT

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
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In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully request that this Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants request that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

Pursuant to 37 C.F.R. § 1.97(b), it is believed that no fee or statement is required with the Information Disclosure Statement. However, if an Office Action on the merits has been mailed, the Commissioner is hereby authorized to charge the required fees to Deposit Account No. 19-0743 in order to have this Information Disclosure Statement considered.

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The Examiner is invited to contact the Applicants' Representative at the below-listed telephone number if there are any questions regarding this communication.

Pursuant to 37 C.F.R. 1.98(a)(2), Applicant believes that copies of cited U.S. Patents and Published Applications, and Non-Published Applications identifiable by USPTO Serial Number, are no longer required to be provided to the Office. Notification of this change to this effect was provided in the United States Patent and Trademark Office OG Notices dated October 12, 2004 and October 19, 2004. Thus, Applicant has not included copies of any US Patents or US Patent Applications identifiable by serial number that may be cited with this submission. Should the Office require copies to be provided, Applicant respectfully requests that notice of such requirement be directed to Applicant's below-signed representative. Applicant acknowledges the requirement to submit copies of foreign patent documents and non-patent literature in accordance with 37 C.F.R. 1.98(a)(2).

Respectfully submitted,

SCHWEGMAN, LUNDBERG & WOESSNER, P.A.

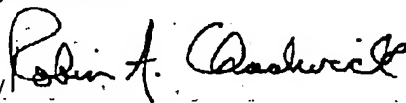
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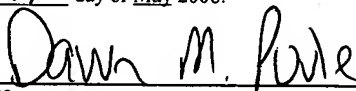


Robin A. Chadwick

Reg. No. 36,477

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 14th day of May 2008.

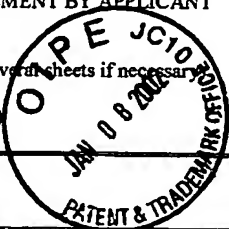
Name



Signature



U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use several sheets if necessary) (PTO-1449)	ATTY. DOCKET NO. 19603/3361 (CRF-D-2650A)	SERIAL NO. 09/848,064
	APPLICANT Jay M. Edelberg et al.	
	FILING DATE May 3, 2001	JAN 15 2002 GROUP ART UNIT TECHNOLOGY CENTER 80700



U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPRO- PRIATE
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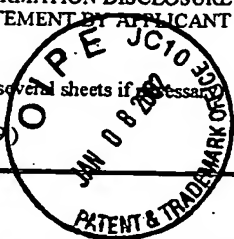
FOREIGN PATENT DOCUMENTS

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	AH						
	AI						
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	AK	Aird, W., et al., (1997) "Vascular Bed-specific Expression of an Endothelial Cell Gene Is Programmed by the Tissue Microenvironment," <i>The Journal of Cell Biology</i> 138(5): 1117-1124.
	AL	Anderson, J.L., et al., (1998, Part II) "A Software Sensor Using Neural Networks for Detection of Patient Workload," <i>Pace Vol. 21</i> : 2204-2298.
	AM	Anglade, F., et al., (1987) "A study of the action of clonidine on secretion from the adrenal medulla in dogs," <i>Br. J. Pharmac.</i> 91: 481-486.
	AN	Anversa, P., et al., (1989) "Morphometric analysis of coronary capillaries during physiologic myocardial growth and induced cardiac hypertrophy: A Review," <i>Int. J. Microcirc: Clin Exp</i> 8: 353-363.
	AO	Bousse, Luc, (1996) "Whole cell biosensors," <i>Sensors and Actuators B</i> 34: 270-275.
EXAMINER		DATE CONSIDERED
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.		

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OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

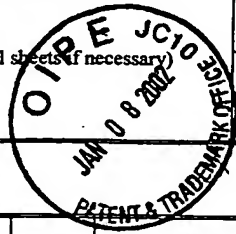
	BK		Boute, W., et al., (1988, Part II) "Introduction of an Automatic QT Interval Driven Rate Responsive Pacemaker," <i>Pace Vol. 11</i> : 1804-1814.
	BL		Brignole, M., et al., (1990, Part II) "Pacing for Carotid Sinus Syndrome and Sick Sinus Syndrome," <i>Pace Vol. 13</i> : 2071-2075.
	BM		Celiker, A., et al., (1998, Part I) "Comparison of Normal Sinus Rhythm and Pacing Rate in Children with Minute Ventilation Single Chamber Rate Adaptive Permanent Pacemakers," <i>Pace Vol. 21</i> : 2100-2104.
	BN		Christini, D. J., et al., (2001) "Direct biologically based biosensing of dynamic physiological function," <i>Am. J. Physiol. Heart Circ. Physiol</i> 280: H2006-H2010.
	BO		Christini, D.J., et al., (1999) "Practical Real-Time Computing System for Biomedical Experiment Interface," <i>Annals of Biomedical Engineering</i> , Vol. 27: 180-186.

EXAMINER

DATE CONSIDERED

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	APPLICANT Jay M. Edelberg et al.	
	FILING DATE May 3, 2001	GROUP: ART UNIT CENTER NO. 1



U.S. PATENT DOCUMENTS

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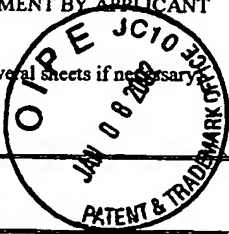
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	CK	Clémenty, J., et al., (1999) "Clinical Significance of Multiple Sensor Options: Rate Response Optimization, Sensor Blending, and Trending," <i>The American Journal of Cardiology</i> , Vol. 83(5B): 166D-171D.
	CL	Clémenty, J., et al., (1998, Part II) "Dual Chamber Rate Responsive Pacing System Driven by Contractility," Final Assessment After 1-Year Follow-up. <i>Pace</i> Vol. 21: 2192-2197.
	CM	Connelly, D.T., et al., (1993) "Initial Experience with a New Single Chamber, Dual Sensor Rate Responsive Pacemaker," <i>Pace</i> Vol. 16: 1833-1841.
	CN	Cook, C.J., (1997) "Real-Time Measurements of Corticosteroids in Conscious Animals Using an Antibody-Based Electrode," <i>Nature Biotechnology</i> , Vol. 15: 467-471.
	CO	Cornell, B.A., et al., (1997) "A Biosensor that Uses Ion-Channel Switches," <i>Nature</i> , Vol. 387: 580-583.
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	APPLICANT Jay M. Edelberg et al.	
	FILING DATE May 3, 2001	TECHNICAL UNIT



U.S. PATENT DOCUMENTS

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OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

	DK	Den Heijer, P., et al., (1989) "Improved Rate Responsive Algorithm in QT Driven Pacemakers - Evaluation of Initial Response to Exercise," <i>Pace Vol. 12</i> : 805-811.
	DL	Edelberg, J.M., et al., (1998) "Enhancement of Murine Cardiac Chronotropy by the Molecular Transfer of the Human β_2 Adrenergic Receptor cDNA," <i>J. Clin. Invest., Vol. 101, No. 2</i> : 337-343.
	DM	Fritz, J., et al., (2000) "Translating Biomolecular Recognition into Nanomechanics," <i>Science, Vol. 288</i> : 316-318.
	DN	Fulmer, R.I., et al., "Transplantation of Cardiac Tissue into the Mouse Ear," <i>Department of Anatomy, Baylor University College of Medicine</i> : 273-281.
	DO	Greco, E.M., et al., (2000) "How to Program Rate Responsive Pacemakers," <i>Pace Vol. 23</i> : 165-173.
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	APPLICANT Jay-M. Edelberg et al.	
	FILING DATE May 3, 2001	GROUP ART UNIT


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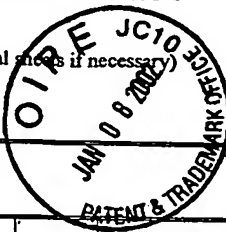
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	EK	Lau, C.P., et al., (1990, Part I) "Pacemaker Mediated Tachycardias In Single Chamber Rate Responsive Pacing," <i>Pace Vol. 13</i> : 1575-1579.
	EL	Leung, S.K., et al., (1998) "An Integrated Dual Sensor System Automatically Optimized by Target Rate Histogram," <i>Pace Vol. 21</i> : 1559-1566.
	EM	Luo, L., et al., (1999) "Ion Channel Sensor," <i>Analytical Letters</i> , 32(7): 1271-1286.
	EN	Makino, S., et al., (1999) "Cardiomyocytes Can Be Generated From Marrow Stromal Cells <i>In Vitro</i> ," <i>J. Clin. Invest.</i> , Vol. 103, No. 5: 697-705.
	EO	Maltsev, V.A., (1993) "Embryonic Stem Cells Differentiate <i>In Vitro</i> Into Cardiomyocytes Representing Sinusnodal, Atrial and Ventricular Cell Types," <i>Mechanisms of Development</i> 44: 41-50.
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	APPLICANT Jay.M. Edelberg et al.	
	FILING DATE May 3, 2001	GROUP ART UNIT 6122



U.S. PATENT DOCUMENTS

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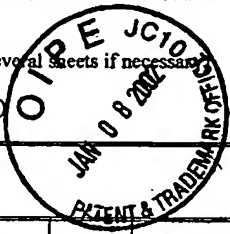
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	FH						
	FI						
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OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

	FK	Marshall, A., et al., (1998) "DNA Chips: An Array of Possibilities," <i>Nature Biotechnology</i> , Vol. 16: 27-31.
	FL	Moura, P.J., et al., (1987, Part I) "Chronotropic Response of an Activity Detecting Pacemaker Compared with the Normal Sinus Node," <i>Pace</i> Vol. 10: 78-86.
	FM	Mulchandani, P., et al., (1999) "Biosensor for Direct Determination of Organophosphate Nerve Agents. 1. Potentiometric Enzyme Electrode," <i>Biosensors & Bioelectronics</i> 14: 77-85.
	FN	Naessens, M., et al., (1998) "Whole-Cell Biosensor for Direct Determination of Solvent Vapours," <i>Biosensors & Bioelectronics</i> , Vol. 13, No. 3-4: 341-346.
	FO	Ogawa, H., et al., (1991) "Heart Rate Responses to Autonomic Drugs in Sick Sinus Syndrome - Correlation with Syncope and Electrophysiologic Data," <i>Japanese Circulation Journal</i> , Vol. 55: 15-23.
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	APPLICANT Jay M. Edelberg et al.	
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U.S. PATENT DOCUMENTS

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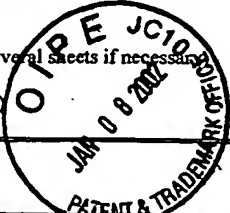
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	GK	Owicki, J.C., et al., (1992) "Biosensors Based on the Energy Metabolism of Living Cells: The Physical Chemistry and Cell Biology of Extracellular Acidification," <i>Biosensors & Bioelectronics</i> 7: 255-272.
	GL	Pancrazio, J.J., et al., (1999) "Development and Application of Cell-Based Biosensors," <i>Annals of Biomedical Engineering</i> , Vol. 27: 697-711.
	GM	Rendell, M.S., et al., (1998) "The Relationship of Laser - Doppler Skin Blood Flow Measurements to the Cutaneous Microvascular Anatomy," <i>Microvascular Research</i> 55: 3-13.
	GN	Rivard, A., et al., (1999) "Age-Dependent Impairment of Angiogenesis," <i>Circulation</i> 99(1): 111-120.
	GO	Rodriguez, R.D., et al., (1990) "Update on Sick Sinus Syndrome, a Cardiac Disorder of Aging," <i>Geriatrics</i> , Vol. 45, No. 1: 26-36.
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	HK	Rowe-Taitt, C.A., et al., (2000) "Array Biosensor for Detection of Biohazards," <i>Biosensors & Bioelectronics</i> 14:785-794.
	HL	Strobel, J.S., et al., (2000) "Programming of Sensor Driven Pacemakers," <i>MD Consult - Journal Article, Vol. 18, No. 1:1-22.</i>
	HM	Sugiura, T., et al., (1998) "A Self-Tuning Effect of Membership Functions in a Fuzzy-Logic-Based Cardiac Pacing System," <i>Journal of Medical Engineering & Technology, Vol. 22, No. 3: 137-143.</i>
	HN	Sutton, R., et al., (1986, Part II) "The Natural History of Sick Sinus Syndrome," <i>Pace Vol. 9: 1110-1114.</i>
	HO	Updike, S.J., et al., (2000) "A Subcutaneous Glucose Sensor With Improved Longevity, Dynamic Range, and Stability of Calibration," <i>Diabetes Care, Vol. 23, No. 2: 208-214.</i>
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PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(use several sheets if necessary)
(PTO-1449)

ATTY. DOCKET NO.
19603/3361 (CRF-D-2650A)

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	IK	Wang, T.L., et al., (1994) "Sick Sinus Syndrome as the Early Manifestation of Cardiac Hemochromatosis," <i>Journal of Electrocardiology</i> , Vol. 27, No. 1: 91-96.
	IL	Windecker, S., et al., (1998) "Two-Year Experience with Rate-Modulated Pacing Controlled by Mixed Venous Oxygen Saturation," <i>Pace</i> Vol. 21: 1396-1404.
	IM	Wong, K.K., (1993) "Vascular Effects of Low and High Doses of Clonidine in Rats," <i>Artery</i> 20(4): 180-188.
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